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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,752	03/15/2001	Scott M. Zimmerman	OM-1670	4335

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EXAMINER

ALANKO, ANITA KAREN

ART UNIT PAPER NUMBER

1765

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/808,752	Applicant(s) ZIMMERMAN ET AL.	
	Examiner Anita K Alanko	Art Unit 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/5/03-IDS, 12/1/03-RCE, 3/23/04-Amdt.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,9-28 and 31-48 is/are pending in the application.
- 4a) Of the above claim(s) 1-3,9-26,35-43,45,46 and 48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27,28,31-34,44 and 47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>9/5/03</u> | 6) <input type="checkbox"/> Other: |

Election/Restrictions

Applicant's election with traverse of Group II in Paper No. 8 is acknowledged.

Applicants arguments are not persuasive because the product can be made by a different process such as etching or sand blasting a substrate and then sequentially depositing a polymer and metal layer, instead of laminating a metal/polymer layer to a polymer substrate.

Applicant is reminded/examiner acknowledges that process claims directed to the process of making or using the patentable product can be rejoined with the product claims when the product claims are allowable.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 27-28, 31-34, 44 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al (U.S. Patent No. 6,252,010 B1) in view of Nakamura et al (US 6,376,053 B1).

Takeuchi discloses a composite comprising:

- a polymeric substrate having a first etched surface (col.14, lines 6-15),
- a first polyimide film laminated to the first etched surface of the substrate (col.14, lines 16-20; since a polyamideimide comprises polyimide), and

- a layer of a metal foil attached to an opposite side of the first polymeric film (col.14, lines 21-22),
- wherein the peel strength is at least 4 lbs/inch (col.23, lines 46-47)

As to amended claim 27 and claim 47, Takeuchi discloses that fillers may be present (col.11, lines 16-35, col.12, lines 44-48), but does not disclose the amount of fillers present. Nakamura teaches that conventional fillers for inter-laminar adhesive films for multilayer printed wiring boards include barium titanate or silica, among others, at for example 30% or less (col.4, lines 24-57). Nakamura teaches that through the addition of fillers, the boards have excellent laser piercing properties. It would have been obvious to one with ordinary skill in the art to include 30% or less barium titanate or silica in the polyimide film of Takeuchi because Nakamura teaches that to do so is conventional in order to produce boards that have excellent laser piercing properties.

As to claims 31-32, the metal film comprises copper (col.14, lines 6-22).

As to claims 33-34, the first polymeric film has a thickness of 30 microns or less (col.14, lines 25-26) and the metal foil has a thickness of 18 microns (col.23, lines 5-9).

As to claim 44, process limitations are given little patentable weight in product claims. The viscosity has no effect that can be determined by the examiner on the final product.

Claims 27-28, 31-34, 44 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (U.S. Patent No. 5,234,522) in view of Nakamura et al (US 6,376,053 B1).

Suzuki discloses a composite comprising:

- a polymeric substrate having a first etched surface (col.3, lines 1-22),
- a first polyimide film attached to the first etched surface of the substrate (col.3, lines 32-33), and
- a layer of a metal foil attached to an opposite side of the first polyimide film (col.7, lines 35-40, the surface bearing a circuit encompasses comprising a metal foil);
- wherein the resulting printed circuit board composite has a peel strength of at least 4 lbs/inch (col.9, lines 53-56).

As to amended claim 27 and claim 47, Suzuki does not disclose to add fillers. Nakamura teaches that conventional fillers for inter-laminar adhesive films for multilayer printed wiring boards include barium titanate or silica, among others, at for example 30% or less (col.4, lines 24-57). Nakamura teaches that through the addition of fillers, the boards have excellent laser piercing properties. It would have been obvious to one with ordinary skill in the art to include 30% or less barium titanate or silica in the polyimide film of Suzuki because Nakamura teaches that to do so is conventional in order to produce boards that have excellent laser piercing properties.

As to claim 28, Suzuki discloses that the composite may comprise a double-sided copper-clad polyimide film (col.8, lines 1-8).

As to claims 31-32, the metal film comprises copper (col.8, lines 1-8).

As to claims 33-34, the first polymeric film has a thickness of 40 microns (col.9, line 31) and the metal foil has a thickness of 35 microns (col.9, line 38).

As to claim 44, process limitations are given little patentable weight in product claims. The viscosity has no effect that can be determined by the examiner on the final product.

Response to Amendment

The 112 rejection is withdrawn. The claims are now rejected under 35 USC 103 over Takeuchi in view of Nakamura and Suzuki in view of Nakamura.

Applicant argues that "laminated" is a structural limitation. It is unclear how this limitation produces a different product than that of Takeuchi or Suzuki, particularly since both use the same method of coating and then drying to form the polyimide as in the instant invention.

Nakamura is newly cited to teach conventional fillers for resin adhesive layers in multilayer circuit boards.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon, Tues & Fri: 8:30 am-5 pm; Wed&Thurs: 10 am-2 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anita K. Alanko

Anita K Alanko
Primary Examiner
Art Unit 1765